

REMARKS

The above amendments and these remarks are responsive to the Office action dated September 22, 2004. With entry of this amendment, claims 1-15 are pending. Claims 1, 4, 8 and 9 have been amended and claims 10-15 have been added. No new matter has been added by these amendments.

In the Office Action, claims 1, 3 and 5-8 were rejected under 35 U.S.C. 103(a) based on U.S. Pat. No. 5,846,102 to Nitta et al. ("Nitta") in view of U.S. Pat. No. 5,934,959 to Inman Sr. et al. ("Inman"). Claims 2, 4 and 9 were indicated as allowable if rewritten in independent form. Applicants respectfully traverse the rejections, but nevertheless amend the claims as indicated above. In view of the amendments above, and the remarks below, applicants respectfully request reconsideration of the application under 37 C.F.R. § 1.111 and allowance of the pending claims.

Claims 1-3, 5-8 and 10

Claims 1 and 8 have been amended to more particularly recite the function of the valve in the air passage. Claims 1 and 8, as amended, recite "the air passage is provided with a valve configured to permit a flow of air with the air passage from the outside of the engine toward the inside of the exhaust port." An exemplary embodiment illustrating such a construction is depicted in Fig. 4 below.

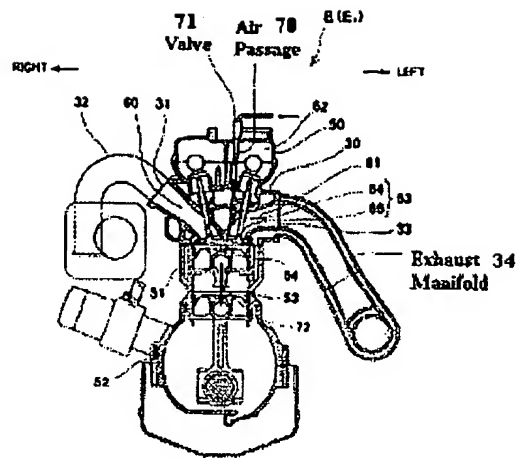
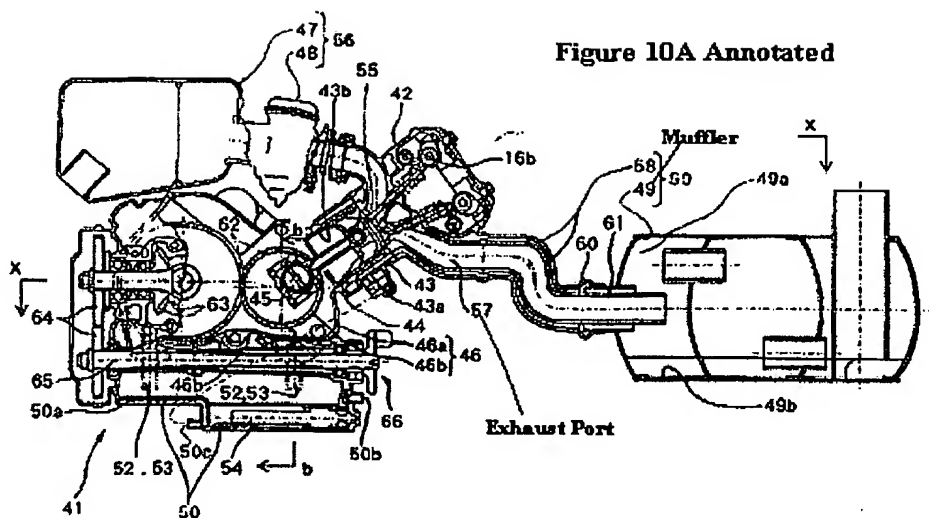


Fig. 4 Annotated

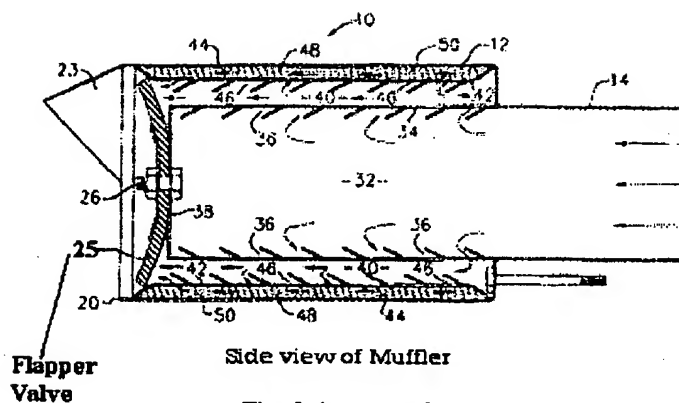
One end of air passage 70 is connected “to a vicinity of an end of the corresponding exhaust port 61 on the combustion chamber 54 side, and are each configured to open toward an inside of the corresponding exhaust port 61. The other ends of each of the air passages 70 extend through an upper portion of the cylinder head cover 50 and are configured to open outside the engine E₁.” (See specification, page 12, p. 0043) The valve, 71, is an “one-way valve [which] permits only the flow of the air from the outside [of] the engine E₁ to the exhaust port 61.” (See specification page 12, p. 0043).

In contrast, air passage 57 in Nitta, as illustrated in Fig. 10 a, depicted below, connects



the muffler 49 to the engine and has no direct access to the outside of the engine. Therefore, even with an appropriate valve, the air passage in Nitta would not perform the same function as air passage 70 claimed in the present invention.

Additionally, valve 25 in the air passage exhaust system of Inman, is a flapper valve designed to “prevent the back flow of air or water into the muffler” (See Inman, column 3, lines 21-24) and not a valve permitting air to enter the exhaust system as currently claimed. As can be seen in fig. 4, valve 71 of the application is not part of the exhaust manifold and protrudes above the water for the purpose of allowing air into the exhaust port. Valve 25 of Inman, as illustrated below, is at the end of the muffler for the purpose of preventing air or water from entering the exhaust system.



"The flapper valve 25 is formed from a sheet of resilient material that is capable of both being fixedly mounted to the muffler and the center of the sheet, and being movable along its edge portion to permit the escape of exhaust gas between it and an adjacent wall of the muffler . . . [which] allows the flapper valve to both provide an improved seal against the muffler, to thereby provide enhanced protection against air or water backflow into the muffler, and to provide a less restrictive flow path for exhaust gases leaving the muffler, thereby reducing airflow resistance or back pressure through the muffler." (Inman column 3, lines 34-47). Valve 25 has therefore been designed to perform a different task, namely preventing water or air from entering through the muffler, functions differently, and has a different location than valve 71 of the present application, which allows air from outside the engine to be drawn into the exhaust port before it connects to the muffler.

Nitta and Inman do not address problems caused by steam from the exhaust condensing on an inner wall of the exhaust nor the possibility of back flow of steam when the engine stops. They do not teach or suggest the desirability or existence of an air passage connecting an exhaust port to the outside of the engine. Applicants respectfully submit that Nitta and Inman, alone or

in combination, fail to disclose or suggest all of the features recited in amended claims 1 and 8. Therefore applicants believe that amended claims 1 and 8, as well as dependent claims 2, 3, 5-7, and 10 are allowable.

Claims 4 and 9

Claims 4 and 9 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claims 4 and 9 have been rewritten to include the limitations of the base claim and any intervening claim. In view of these amendments, Applicants respectfully submit that claims 4 and 9 are allowable.

Claims 11-15

Claim 11 combines original claims 1 and 2. Claim 2 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claim 11 is claim 2 in independent form including the limitations of the base claim and any intervening claim. Applicants therefore respectfully submit that claim 11 and dependent claims 12-15 are therefore allowable.

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.


CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, to: Mail Stop AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on January 20, 2005.



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